Methods: The present study examined the association between fatigue, pain, overall quality of life, and perceived health status with employment at 1-year post-transplant. Participants (N=404) completed a lifestyle survey 1-year post-SCT. Participants provided current employment status and whether change was attributable to their health status.

Results: Participants were predominately married/partnered (81.7%), Caucasian/Non-Hispanic (81.6%), males (52%) between ages 19-76 (mean: 56 years) and majority underwent autologous transplants (70.1%). Prior to illness diagnosis, 60.8% were employed Full-Time, which decreased at the time of transplant (35.5%) and at 1-year post-SCT (31.0%). Employment status was correlated with all variables of interest ($p<0.05$). Analysis of variance and chi-square analysis were completed. Fatigue, pain, and quality of life were rated on a 0-10 scale. Health status was rated as 'excellent' to 'poor' on a 5-point scale. Patients' mean scores revealed low/moderate fatigue (3.38), low pain (1.87) and good quality of life (7.43). Most rated their health as 'very good' (26.9%) or 'good' (22.7%). Fatigue did not vary by employment status. Pain was greatest for patients unemployed due to health status compared to those employed full-time or unemployed due to other ($p<.05$). Patients employed part-time enjoyed greater quality of life than those unemployed due to Health status ($p<.05$). Those employed full-time were most likely to report 'excellent' (48.0%), 'very good' (37.5%), or 'good' (33.9%) health. 'Fair' health was mostly reported by those unemployed due to health status (41.3%). Retirees, regardless of health status, were most likely to report 'poor' health (57.2%).

Conclusion: Patients' ability and desire to return to work post-transplant should be considered a meaningful component of survivorship expectations and long-term adjustment.

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Factors Associated with Fatigue in Chronic Graft-Versus-Host Disease

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Table 1
Univariate analysis

	Not fatigued (N=160)	Fatigued (N=103)	*p*
# prior cGVHD therapies	3.5	4.2	0.007
PCS	39.3	29.9	<0.0001
MCS	50.4	42.4	<0.0001
ESR	22.6	28.8	0.007
CRP	6.1	7.7	0.019
TSH	1.8	2.2	0.035
HAP max activity score	74.7	65.4	<0.0001
HAP adj activity score	64.8	50.0	<0.0001
Nutrition score PG-SGA	6.0	9.6	<0.0001
KPS			<0.0001
Walk velocity			<0.0001
PBSC			0.0077

Background: Chronic graft-versus-host disease (cGVHD) is a major cause of morbidity and non-relapse mortality after allogeneic hematopoietic cell transplantation (HCT). Although fatigue is common after HCT, little is known about fatigue in patients with cGVHD. The aim of this study was to explore factors associated with fatigue in cGVHD.

Methods: Data were drawn from a cohort of adults with cGVHD (n=263). To classify patients as fatigued, a single item (extent to which respondent was bothered in the past month by loss of energy [LOE]) from the Lee cGVHD Symptom Scale was employed. Those who were 'not at all', 'slightly', or 'moderately' bothered by LOE were classified as not fatigued; those who were 'quite a bit' or 'extremely' bothered were classified as fatigued. Nonparametric tests were used to compare variables of interest in patients with and without fatigue; logistic regression was used to model predictors of fatigue.

Results: In univariate analysis, several parameters were significantly associated ($p<0.005$) or demonstrated a trend towards significant association ($0.005\leq p<0.05$) with fatigue (Table 1). Factors not associated were NIH global severity score, NIH organ scores, # of involved organs, time since cGVHD onset, platelets, hemoglobin, albumin, erythematous or sclerotic skin involvement, intensity of immunosuppression, therapeutic intent at time of evaluation, age, gender, BMI, conditioning regimen, donor source, C3, C4, prealbumin, ferritin, lung function score, FEV1, respiratory symptoms, range of motion, and grip strength. Logistic regression modeling initially including factors associated with fatigue in univariate analysis demonstrated that having received peripheral blood stem cells (PBSC) and having impairments in self-rated physical and mental health predicted fatigue. Fatigued respondents had SF36 physical component score (PCS) and mental component score (MCS) means that were markedly lower than US normative value, and human activity profile (HAP) scores reflecting limitation in daily activities.

Conclusions: The absence of association with either NIH cGVHD global severity or organ scores suggests that fatigue in cGVHD patients may have a distinct pathogenesis. The association with ESR and CRP point towards possible inflammatory mediators. Findings confirm the deleterious impact of fatigue on self-rated health and daily activities, and emphasize the need for routine screening in HCT survivors. Further study of the characteristics, correlates, and consequences of fatigue in cGVHD is warranted.

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Providing Care to a Hematopoietic CELL Transplant Recipient: Caregivers Describe Their Own Quality of Life

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